

**Notice of Allowability**

Application No.

10/039,290

Examiner

Christine Sung

Applicant(s)

SHAKOURI ET AL.

Art Unit

2884

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/26/06.
2. ☒ The allowed claim(s) is/are 1-31, 40-44 and 49-59.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- .1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____     | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

***Response to Amendment***

1. The amendment filed on June 26, 2006 has been accepted and entered.
2. The request for continued examination filed on June 26, 2006 has been accepted and entered.

***Allowable Subject Matter***

3. Claims 1-31, 40-44 and 49-59 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Applicant's arguments are persuasive.

Regarding claim 1, none of the prior art of record specifies an apparatus for providing non-contact thermal measurements of an active electronic device, namely the means for subjecting the active electronic device to modulated thermal radiation that is in response to changes in the active device (i.e. operating current or overheated device) and from this, generating signals (bandwidth limited AC -Component) that correspond to the modulated thermal excitation of the active device, along with the other recited limitations of the claim. References such as Taketoshi (see previous office action dated 3/23/2006), disclose measuring changes in thermorefectance of a surface of a static sample by comparing signals from two laser beams, but does not specify measuring signals that correspond to thermal modulation of an active device dependent upon the operating current/device state.

Regarding claims 2 and 57, none of the prior art of record specifies an apparatus for providing non-contact thermal measurements of an active electronic device, namely the circuit for modulating the thermal excitation of the active electronic device at a known frequency in response to changes in operating current or device state and from this modulation, generating

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signals via a signal processor that correspond to the modulated thermal excitation of the active device, along with the other recited limitations of the claim. References such as Taketoshi (see previous office action dated 3/23/2006), disclose measuring changes in thermorefectance of a surface of a static sample by comparing signals from two laser beams, but does not specify measuring signals that correspond to thermal modulation of an active device dependent upon the operating current/device state.

Regarding claims 40, 43 and 58, none of the prior art of record specifies a method for providing high resolution thermal imaging of an active electronic device namely steps of modulating the device state or operating current within a frequency range and generating signals (bandwidth limited AC -Component) that correspond to the modulated thermal excitation of the active device, along with the other recited limitations of the claim. References such as Taketoshi (see previous office action dated 3/23/2006), disclose measuring changes in thermorefectance of a surface of a static sample by comparing signals from two laser beams, but does not specify measuring signals that correspond to thermal modulation of an active device dependent upon the operating current/device state.

The balance of claims are dependent upon the aforementioned claims and are allowable for at least the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Friday 7-3 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CS

Christine Sung  
Examiner  
Art Unit 2884

  
OTILIA GABOR  
PRIMARY EXAMINER